PATENT
ATTORNEY DOCKET NO.: 053837-5001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	
	)	
Richard WISE	)	Confirmation No. 4205
	)	
Application No.: 09/985,952	)	Group Art Unit: 3653
	)	
Filed: November 6, 2001	)	Examiner: J. Rodriguez
	)	
For: APPARATUS AND METHOD FOR ISOLATING MATERIALS	)	**Mail Stop Appeal Brief - Patents**
	)	

Commissioner for Patents
U.S. Patent and Trademark Office
2011 South Clark Place
Customer Window, **Mail Stop Appeal Brief - Patents**
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

APPELLANT'S BRIEF TRANSMITTAL FORM

1. Transmitted herewith is an Appellant's Brief Under 37 C.F.R. 1.192 (in triplicate), which is being submitted further to the Notice of Appeal filed August 24, 2004.

2. Additional papers enclosed.

   [ ] Drawings: [ ] Formal [ ] Informal (Corrections)
   [ ] Information Disclosure Statement
   [ ] Form PTO-1449, ___ references included
   [X] English-language Translation of DE 311387 (3 copies)
   [ ] Declaration of Biological Deposit
   [ ] Submission of "Sequence Listing", computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.

3. Oral Hearing Under 37 C.F.R. 1.194

[ ] Oral hearing is hereby requested.
[ ] Fee under 37 C.F.R. 1.17(d) is enclosed.

4. Extension of time

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

[ ] Appellant petitions for an extension of time, the fees for which are set out in 37 CFR 1.17(a)-(d), for the total number of months checked below:

Total months requested	Fee for extension	[fee for Small Entity]
[ ] one month	$ 110.00	$ 55.00
[ ] two months	$ 410.00	$ 205.00
[ ] three months	$ 930.00	$ 465.00
[ ] four months	$1,450.00	$ 725.00
[ ] five months	$1,970.00	$ 985.00

Extension of time fee due with this request: **$0.00**.

If an additional extension of time is required, please consider this a Petition therefor.

5. Fee Payment

[ ] No fee is to be paid at this time.

[X] The Commissioner is hereby authorized to charge **$340.00** to Deposit Account No. 50-0310.

[X] The Commissioner is hereby authorized to charge any fees including fees due under 37 CFR 1.16 and 1.17 which may be required, or credit any overpayment to Deposit Account No. 50-0310.

Respectfully submitted,

MORGAN, LEWIS & BOCKIUS

By: _____ , FOR
REG. NO. 48,183
David B. Hardy
Reg. No. 47,362

Dated: October 25, 2004

CUSTOMER NO. 009629
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, NW
Washington, D.C. 20004
Tel.: (202) 739-3000

AF IFW

PATENT
ATTORNEY DOCKET NO.: 053837-5001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)	
	)	
Richard J. WISE	)	Confirmation No. 4205
	)	
Application No.: 09/985,952	)	Group Art Unit: 3653
	)	
Filed: November 6, 2001	)	Examiner: J. Rodriquez
	)	
For: APPARATUS AND METHOD FOR ISOLATING MATERIALS	)	**Mail Stop Appeal Brief-Patents**
	)	

Commissioner for Patents
U.S. Patent and Trademark Office
2011 South Clark Place
Customer Window, **Mail Stop Appeal Brief - Patents**
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

APPELLANT'S BRIEF UNDER 37 C.F.R. § 1.192

This brief is in furtherance of the Notice of Appeal, filed in the above-identified patent application on August 24, 2004. The fee required under 37 C.F.R. § 1.17(c) is being filed concurrently herewith. This brief is being filed in triplicate.

1. The Real Party In Interest

The real party in interest in this appeal is International Separation System, Ltd. of Bridgetown, Barbados.

2. Related Appeals and Interferences

Appellant is not aware of any other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the appeal.

3. Status of Claims in Application

The status of the claims is as follows:

Claims canceled: 9-57.
Claims pending: 1-8.
Claims allowed: none.
Claims rejected: 1-8.
Claims withdrawn: none.

The claims on appeal are 1-8, which stand rejected under 35 U.S.C. § 103(a).

4. Status of Amendments

Appellant filed a Request for Reconsideration under 37 C.F.R. § 1.116 on June 10, 2004 in response to the Final Office Action dated March 10, 2004. On July 8, 2004, the Examiner issued an Advisory Action which indicated that the Request for Reconsideration under 37 C.F.R. § 1.116 was considered but did not place the application in condition for allowance. Appellant filed a Notice of Appeal on August 24, 2004.

5. Summary of the Invention

Appellant's present invention relates generally to an apparatus and method for isolating valuable or toxic substances from source materials. As discussed in Appellant's specification beginning at paragraph [0026] at page 16, and shown in FIGs. 1 and 2A-2D, composite materials are disposed at a first end 39 of a first conveyor 13 and discharged at a second end 41 of the first conveyor 13. In addition, a second conveyor 11 is disposed in parallel to the first conveyor 13, and includes a plurality of magnets 15, 17, 19, 21, and 23, and a plurality of paddles 25. Accordingly, as the first conveyor 13 transports the composite materials along a length of the first conveyor 13, the paddles 25 of the second conveyor 11 traverse along a distance of the first conveyor 13. In addition, as the composite materials

travels along the first conveyor 13, the plurality of magnets 15, 17, 19, 21, and 23 cause specific materials within the composite materials to become attracted to the plurality of magnets 15, 17, 19, 21, and 23.

For example, since each of the plurality of magnets 15, 17, 19, 21, and 23 may have different magnetic field strengths, different materials within the composite materials may be attracted to specific ones of the plurality of magnets 15, 17, 19, 21, and 23. Accordingly, the different materials within the composite materials may be separated from one another. Thus, as the paddles 25 move along the second conveyor 11, the attracted portions of the composite materials are moved away from the magnetic fields, withdrawn from the plurality of magnets 15, 17, 19, 21, and 23, and are re-deposited onto the first conveyor 13 at specific locations. In addition, the tumbling motion of the attracted materials allows for non-attracted materials trapped by the attracted materials to fall back onto the first conveyor 13. Therefore, the different attracted portions of the composite materials become stratified and layered on non-attracted portions of the composite material.

In addition, in accordance with the disclosed invention, variations of the magnetic fields induce surface currents on specific non-ferrous materials, such as gold and precision metals, which in turn create magnetic fields that are repulsive to the magnetic field created by the magnets 15, 17, 19, 21, and 23. Accordingly, the non-ferrous materials may be forced along a downward direction away from the magnets 15, 17, 19, 21, and 23, and regular magnetic materials may be forced along an upward direction toward the magnets 15, 17, 19, 21, and 23. Thus, the non-ferrous materials may be efficiently separated from the regular magnetic materials.

Finally, as the first conveyor 13 travels toward the second end 41, the stratified portions of the composite materials may be deposited into a first hopper 27. Thus, a final portion of the composite materials that has specific magnetic properties that are attracted to the magnets 23a and 23b may be deposited into a second hopper 29. As a result, a relatively high degree of separation may be simply accomplished for many various types of materials.

6. Issue

The following issue is presented on appeal: whether the rejection of claims 1, 6, and 8 under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr. (US 2,702,123) and Weatherby (US 1,218,916), the rejection of claim 2 under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr., Weatherby, and Soley (US 4,055,489), the rejection of claims 3-5 under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr., Weatherby, and "legal precedent," and the rejection of claim 7 under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr., Weatherby, and "what is well known in the art" should be reversed because (1) the teachings of the prior art are not sufficient to render the claims *prima facie* obvious; (2) the Final Office Action fails to establish a *prima facie* case of obviousness of the claimed invention; and (3) none of the applied references, whether taken singly or in combination, would have rendered the claimed invention as a whole obvious at the time of the invention to a person having ordinary skill in the art.

7. Grouping of Claims

In as far as present herein, claims 1-8 stand or fall together.

8. Arguments

(i) Rejections under 35 U.S.C. § 112, first paragraph

No claims are presently rejected under 35 U.S.C. § 112, first paragraph.

(ii) Rejections under 35 U.S.C. § 112, second paragraph

No claims are presently rejected under 35 U.S.C. § 112, second paragraph.

(iii) Rejections under 35 U.S.C. § 102

No claims are presently rejected under 35 U.S.C. § 102.

(iv) Rejections under 35 U.S.C. § 103

Claims 1, 6, and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr. (US 2,702,123) and Weatherby (US 1,218,916), claim 2 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr., Weatherby, and Soley (US 4,055,489), claims 3-5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr., Weatherby, and "legal precedent," and claim 7 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over DE 311387 in view of Injeski, Jr., Weatherby, and "what is well known in the art."

Appellant respectfully traverses these rejections as being based upon combinations of references that neither teach nor suggest the novel combination of features recited in independent claim 1, and hence dependent claims 2-8.

A. Claims 1-8 Are Non-Obvious Over The Applied Art

Independent claim 1 recites an apparatus for separating non-magnetic mineral values from a source material containing magnetic material and non-magnetic material including, in part, "a second endless conveyer positioned beneath and parallel to the first conveyer in a

vertically spaced relationship therewith and having a front end and a rear end."

The Final Office Action admits that "DE '387 as set forth above thus teaches all that is claimed except for expressly teaching said second conveyor parallel to said first conveyor," (page 2, lines 13-14). Thus, the Final Office Action relies upon Injeski, Jr. and Weatherby for "both demonstrating that the position of adjacent conveyors in parallel is well-known and a mere design choice dependent on the type of material being conveyed or the desired conveying speed," (page 2, lines 16-19). As a result, the Office Action alleges that it would have been obvious to "modify the invention of DE '387 with parallel adjacent conveyors as the positioning of conveyors is a mere design choice," (page 2, lines 20-21). Appellant respectfully disagrees.

Appellant respectfully asserts that combining the teachings of Injeski, Jr. and/or Weatherby with DE 311387 changes the principle of operation of DE 311387, thereby rendering the invention of DE 311387 unsatisfactory for its intended purpose. Appellant respectfully submits concurrently herewith an English-language translation of DE 311387 to evidence the explicit disclosure of DE 311387. For example, as taught at paragraph 7, page 2 of the English-language translation, DE 311387 teaches that:

> "[d]ue to belt *f* gradually getting closer to belt *a*, the more strongly magnetizable particles are already attracted at a greater distance than more weakly magnetizable particles. The separation material is not therefore attracted all at once by the poles, in which case low-grade particles would only be separated off to a very minor extent."

Furthermore, DE 311387 concludes with claims reciting that:

> "2. Dry separator according to Claim 1, characterized in that the distance of the special feeding belt from the pole faces and the separating conveyor belt gradually becomes smaller and this intensifies the effect of the magnet poles on the transported crude ore."

Accordingly, Appellant respectfully asserts that the belt *f*, in FIG. 1 of DE 311387, is specifically positioned along an incline with respect to belt *a* to provide that "[t]he separation material is not therefore attracted all at once by the poles, in which case low-grade particles would only be separated off to a very minor extent," as explictly taught by DE 311387 beginning at page 2, paragraph 7. Thus, Appellant asserts that modifying DE 311387 with the teachings of Injeski, Jr. and/or Weatherby would render DE 311387 unsatisfactory for its intended purpose, and would change the principle operation of DE 311387.

As MPEP 2143.01 instructs, "[I]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." Accordingly, modifying DE 311387 with the teachings of Injeski, Jr. and/or Weatherby would cause DE 311387 to fail to function such that "the more strongly magnetizable particles are already attracted at a greater distance than more weakly magnetizable particles," and "the separation material is not therefore attracted all at once by the poles, in which case low-grade particles would only be separated off to a very minor extent," as explicitly taught by DE 311387 beginning at page 2, paragraph 7. Thus, Appellant respectfully asserts that combining the teachings of Injeski, Jr. and/or Weatherby would render DE 311387 unsatisfactory for its intended purpose.

Furthermore, MPEP 2143.01 instructs, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)." Accordingly, Appellant further asserts that combining the teachings of Injeski, Jr. and/or Weatherby would change the principle of operation of DE 311387 since placing belt *f*, in FIG. 1 of DE 311387, in parallel to belt *a* would not result in a condition where "the more strongly magnetizable particles are already attracted at a greater distance than more weakly magnetizable particles," and "[t]he separation material is not therefore attracted all at once by the poles, in which case low-grade particles would only be separated off to a very minor extent," as required by DE 311387. Furthermore, Appellant respectfully asserts that none of the prior art of record provides proper motivation to change the principle of operation of DE 311387.

Therefore, Appellant respectfully asserts that the Final Office Action has not established any proper motivation to modify DE 311387, and thus not established a *prima facie* case of obviousness with respect to independent claim 1, and hence dependent claims 2-8.

Appellant further asserts that the Final Office Action does not rely on Soley to remedy the deficiencies of DE 311387, Injeski, Jr. and/or Weatherby. Moreover, Appellant respectfully asserts that Soley cannot remedy the deficiencies of DE 311387, Injeski, Jr. and/or Weatherby.

Since the Final Office Action fails to meet the requirements for establishing a *prima facie* case of obviousness as to independent claim 1, claim 1 is not obvious. Further, since claims 2-8 depend from claim 1, and incorporate all the features of claim 1, claims 2-8 are

not obvious at least for at least the above reasons for which independent claim 1 is not obvious. Thus, Appellant respectfully requests that the rejections of claims 1-8 under 35 U.S.C. § 103(a) be withdrawn.

(v) Other Rejections

No claims are presently rejected under grounds other than those referred to above.

*****

In view of the foregoing, Appellant respectfully requests the reversal of the Examiner's rejections and allowance of the pending claims. If there are any other fees due in connection with the filing of this Appeal Brief, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account No. 50-0310.

Respectfully submitted,

MORGAN LEWIS & BOCKIUS LLP

By: _____

David B. Hardy
Reg. No. 47,362

Dated: October 25, 2004

Customer No. 009629
MORGAN LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
(202) 739-3000

9. Appendix

Claim 1 (Previously Presented): An apparatus for separating non-magnetic mineral values from a source material containing magnetic material and non-magnetic material, the apparatus comprising:

a first endless conveyer having a front end and a rear end, the first endless conveyer having a textured surface and having a plurality of spaced apart paddles removably mounted thereon;

a second endless conveyer positioned beneath and parallel to the first conveyer in a vertically spaced relationship therewith and having a front end and a rear end, the front end of the second conveyer positioned rearward with respect to the front end of the first conveyer to define a longitudinally staggered relationship between the first conveyer and the second conveyer, the second endless conveyer being configured to receive the source material adjacent its rear end;

a motor for driving the first conveyer in a first direction and the second conveyer in a second direction opposite to the first direction such that a bottom surface of the first endless conveyer and a top surface of the second endless conveyer are driven in substantially the same direction from the respective rear ends towards the respective front ends;

a first wall and a second wall extending between the first conveyer and the second conveyer substantially along the entire length of each conveyer, the first and second walls, the bottom surface of the first endless conveyer, the top surface of the first endless conveyer, and the paddles collectively forming an enclosure within which the source material is positioned; and

a magnetic separation assembly mounted within the first endless conveyer for acting on the source material within the enclosure, the assembly having a frame for supporting discrete sections of magnets, the sections of magnets being mounted to the frame in spaced longitudinal relation to form alternating areas of presence and absence of a magnetic field such that the magnetic separation assembly permits the magnetic fields to intermittently act on the source material to progressively separate the magnetic material from the non-magnetic material as the material is transported along the second endless conveyer within the enclosure.

Claim 2 (Original): The apparatus according to claim 1, wherein the magnetic separation assembly is removably mounted within the first endless conveyer.

Claim 3 (Original): The apparatus according to claim 1, further comprising an adjustable support for supporting the first endless conveyer and the second endless conveyer such that the first and second endless conveyers are adjustable vertically relative to one another.

Claim 4 (Original): The apparatus according to claim 1, wherein the magnetic separation assembly includes, adjacent the front end of the first endless conveyer, a magnetic section having about twice the magnetic field strength of the other of the magnetic sections.

Claim 5 (Original): The apparatus according to claim 1, wherein the motor drives the first conveyer and the second conveyer at a speed ratio of about 4:1.

Claim 6 (Original): The apparatus according to claim 1, wherein the magnetic sections are made of substantially the same magnet composition.

Claim 7 (Original): The apparatus according to claim 1, wherein at least some of the magnetic sections are made of different magnet compositions.

Claim 8 (Original): The apparatus according to claim 1, wherein the first endless conveyer is configured to receive the source material on a top surface thereof and discharge the source material on a top surface of the second endless conveyer at the rear end thereof.

Claims 9-57 (Canceled).

IMPERIAL PATENT OFFICE

PATENT

No. 311387

CLASS 1b. Group 5.

DONNERSMARCK PLANT
UPPER SILESIAN IRON AND COAL WORKS AG
in HINDENBURG, UPPER SILESIA

Magnetic Dry Separator

Patented in the German Empire as of November 28, 1916

The object of this invention is a dry magnetic separator that differs essentially and advantageously from all known devices in that it allows the achievement of very effective conveyance, thorough workability and enrichment of the separation material.

Iron ores in which the low-grade and high-grade content consist of very small particles must, as is known, be crushed very finely for magnetic enrichment. This crushing must not, however, exceed a certain limit when known magnetic separators are used because otherwise there would be less enrichment and separation would ultimately stop altogether. The limits to be observed depend on the way the separator works and its construction.

This new separator is able to economically separate an iron ore where the known designs would have to fail due to the required fineness of the crushing. This purpose is achieved by the conveyor belt equipped with carrier bars made of non-magnetic material and the separation material attached to it going past the pole faces of alternatingly polarizable magnets. This gives the advantageous effect mentioned above. Furthermore, the distance of the particular feeding conveyor from the pole faces and from the separating conveyor belt gradually becomes smaller and the effect of the magnetic poles on the transported crude ore gradually becomes stronger.

Although magnetic fields whose strength increases gradually or incrementally in the through-pass direction of the separation material are admittedly described in many forms of embodiment , the latter are characterized in that the means of conveyance runs through the wedge-shaped gap formed by two opposed poles.

The drawing shows the object of the invention in an embodiment example, i.e.,

Figure 1 shows an axial section according to line A-A of Figure 1, and

Figure 2 shows a cross-section according to B-B of Figure 1.

Inside transport belt *a* there is a fixed magnet system *b* whose north and south poles alternate in the direction of the movement of the belt and produce fields of the width of the belt. The pole faces are turned downward and lie right over the lower length of the belt, separated from it by a thin plate *c* of magnetically unexcitable material to prevent direct contact.

The pole faces form a flat plane but can also form a bowed surface, in order, for example, to achieve a better fit to the belt. The transport belt is equipped with carrier bars *d* which lie parallel to the surface lines of running drum *e*. The feeding of the separation material occurs via transport belt *f* of such a type that its upper length gradually gets closer from below to the lower length of the belt *a* and the magnetic field.

The working cycle is as follows:

From the ore that arrives in a thin layer on belt *f*, the magnetizable particles are drawn by the magnet poles lying above them up against belt *a*, i.e., little by little depending on their degree of attraction. Readily separable, purely low-grade coarser particles remain on belt *f* and are transported directly into collecting bin *h*. The dust-like or powdery low-grade parts adhering to the ore particles are also drawn onto belt *a* and have to be separated out only in the course of the further working cycle.

The separation material attached to the belt is subjected to vigorous working on its way along the pole faces. This working is produced by the separation material being firmly drawn in a dense layer on the stretches of the belt that bridge the space between two neighboring poles. From now on the material would remain in the same place and belt *a* would slide through without a significant conveying action between the clinging layer of ore and the pole face if the non-magnetic carrier bars *d* were not present. The latter cause the separation material to be entrained in the direction of the movement of belt *a* against the restraining effect of the magnetic forces occurring between two neighboring poles. The non-magnetizable carrier bar is not drawn against the pole faces and this saves considerable work consumed by friction and abrasion caused thereby.

If the separation material again passes under a pole from now on, there is a whirling up and dispersion downward of the previously firmly attracted layer of ore and the individual ore particles, under the influence of weight and the forces acting primarily vertically to the pole faces, make the most vigorous free movement through the air. This causes much low-grade material to fall out. The non-magnetizable carrier bars also play an important role in this in that they magnify the movements in a striking manner when passing the poles by removing the ore particles from the poles. Thus, for example, under a pole approx. 90 mm wide (in the direction the belt runs) a vortex approx. 40 mm high forms which increases to 60 to 70 mm at the passage of a carrier bar approx. 10 mm high and equally wide.

Due to belt *f* gradually getting closer to belt *a*, the more strongly magnetizable particles are already attracted at a greater distance than more weakly magnetizable particles. The separation material is not therefore attracted all at

once by the poles, in which case low-grade particles would only be separated off to a very minor extent.

The high-grade ore ore is finally conveyed to collection bin *g* while the low-grade ore is dumped into collection bin *k* from belt *f*.

Claims:

1. Magnetic dry separator, the conveyor belt of which takes the separation material attached to it past the pole faces of alternatingly polarized magnets, characterized in that the conveyor belt is equipped with carrier bars made of non-magnetizable material, for the purpose of achieving effective conveyance, thorough workability and further concentration of the separation material.

2. Dry separator according to Claim 1, characterized in that the distance of the special feeding belt from the pole faces and the separating conveyor belt gradually becomes smaller and this intensifies the effect of the magnet poles on the transported crude ore.

Fig. 1. Schnitt A-A

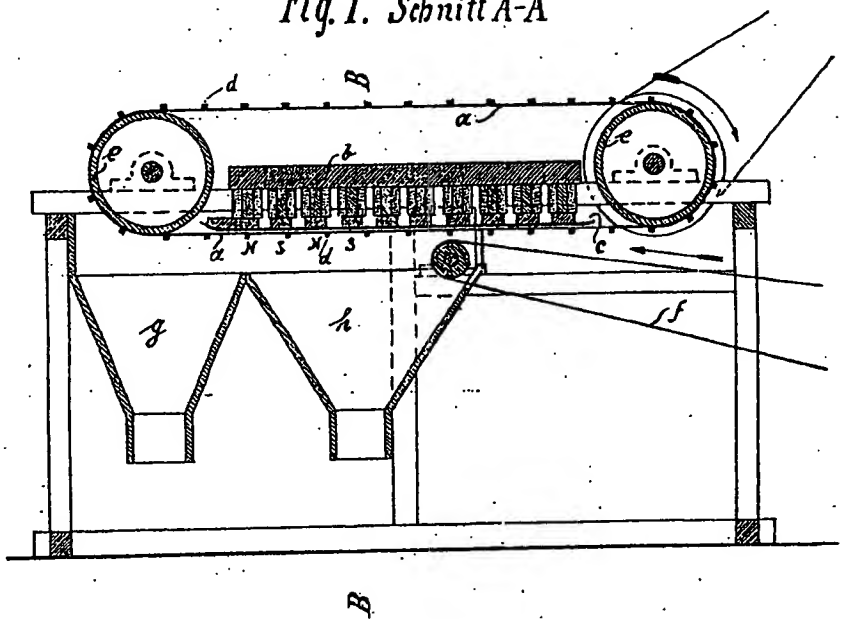
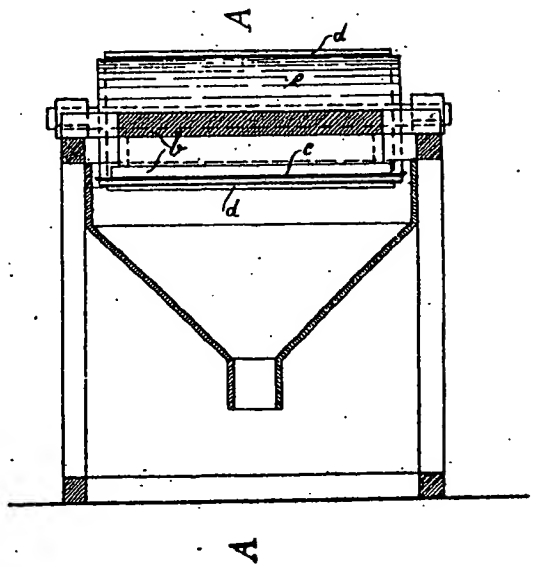


Fig. 2. Schnitt B–B



PHOTOGR. DRUCK DER REICHSDRUCKEREI.